

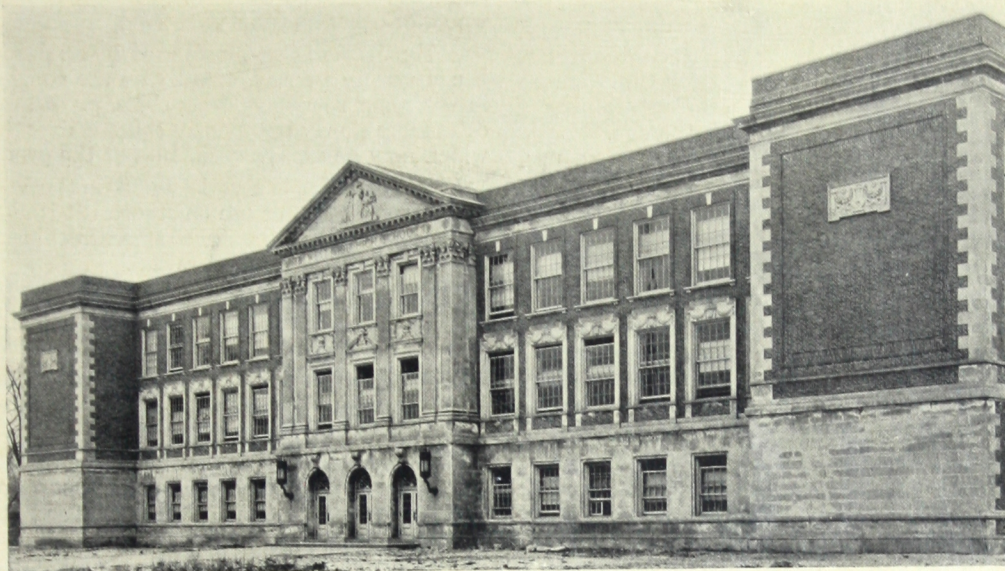
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APR 27 1928

A. I. A. File No. 21-f
Bonding Surface—Con-Tex



Improving and Extending the Uses of Concrete with Con-Tex^{*}



West Side High School, Newark, New Jersey. Guilbert and Betelle, Architects.
Bond Surfaced with Bonding Con-Tex for Plaster Bond.

Producing Bonding Surfaces on Concrete

Bulletin No. 2 ~ Series 1928

CONCRETE SURFACE CORPORATION
342 Madison Avenue New York City

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Bonding Surface—Con-Tex

^{*}Use of this slogan by permission of Portland Cement Association

What Con-Text is and how it is used to Surface Concrete



CON-TEXT is a free-flowing, quick-drying liquid, applied to forms, or, in top-surface work and in stucco work or mortar-finish work where there are no forms, applied directly to the surface of the fresh concrete, stucco or mortar, for the purpose of producing a

superior and permanent surface finish thereon.

Con-Text, whether brushed on forms or applied directly, surfaces concrete or stucco or mortar by preventing the setting of the cement *at the surface only* and to a predetermined depth. This depth of action is dependent upon the "grade" or strength of Con-Text used as described in detail in the text of this brochure.

When the interior of the concrete or mortar has hardened in the normal manner, this sand-like, unset surface produced by the Con-Text action is readily removed by brushing-off, thus exposing the aggregates either for beauty or for bonding or other utilitarian purposes.

Con-Text has no continuing action. Con-Text is not acid or harmful, so that it may be used with wood or steel forms. Con-Text will not affect old concrete or set and hardened concrete.

Con-Text when applied before final set and used according to directions, surfaces any concrete made with any good sand, stone, gravel or slag or any other aggregate commonly employed, and with any Portland cement or with Special cements, such as quick-hardening Portland cements, or White Portland cement or Lumnite cement.

The only labor required is that of applying Con-Text, either to forms or directly to surfaces and brushing off the loose material at the surface kept unset by Con-Text after the unaffected cement has hardened.

The only tools required are a three knot bristle roofer's brush or a standard bristle paint brush for apply-

ing Form Con-Text; a soft bristle brush or a spray machine, either hand or power, for applying Top Surface Con-Text or Stucco Con-Text; and wire brushes or (in the case of floor-slab tops, roadway surfacing and like uses) wire brooms for removing loose surface material as a finishing operation.

The two general kinds of Con-Text bear names that are self-explanatory.

Form Con-Text is used by painting it on forms before concrete is cast. It dries quickly and forms a *hard, weather-resistant coating* on the forms, whether they are steel, or wood, or other materials.

Top Surface Con-Text is used by applying it by soft brushes or by a spray, directly on the concrete itself, as in surfacing roadways, floor slabs, plaza areas, etc. It dries more slowly but *forms a soft film* over the concrete, which may be easily brushed off at the proper time.

Stucco Con-Text is a variety of Top Surface Con-Text, specially adapted for use on stucco. It is sprayed on or brushed directly on the stucco after screeding and troweling and gives a very light reveal.

Both Form Con-Text and Top Surface Con-Text are made in four "grades" or "strengths" each. These grades are: *Light, Medium, Heavy and Bonding grades.*

By these several strengths or "grades," a reveal, or depth of uncovering suited to the size of aggregate of the concrete, may be readily had.

Bonding Grade Con-Text, as its name indicates, reveals stone to a depth best suited for bonding of materials later to be applied, such as plaster, stucco, tiling, cork, waterproofings, etc., etc.

Stucco Con-Text is made in one grade only, suited to a very light reveal as a surface finish on stucco.

All of the above kinds and grades of Con-Text are supplied in 1 gallon and 5 gallon containers only.

* * * * *

Specifications for Con-Text and the uses of Con-Text treated herein are at the end of this brochure.

Specifications for concrete are on the back page. These specifications will well repay any study devoted to them and will be found practical in the field for any and all uses of concrete.

NOTE: The 1928 Series of Brochures on Con-Text and on Concrete Construction comprise the following:

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|---|---|
| No. 1—Producing Texture and Color in Concrete Construction. | No. 5—Producing Permanent Stucco Work on Concrete. |
| No. 2—Producing Bonding Surface on Concrete for Plaster Bond, Stucco Bond, Floor-topping Bond, etc. | No. 6—Producing Locked-on Waterproofing Surfaces on Concrete. |
| No. 3—The Con-Text System of All-Concrete Construction for Buildings. | No. 7—Producing Plaster Bond Surfaces for Plastering on Concrete. |
| No. 4—Surfacing Roads and Pavements with Con-Text. | No. 8—Producing Bonded Concrete Floor Surfaces free from Cracking, Dusting and Scaling. |

Any or all of these Copyrighted Brochures may be had on application to

CONCRETE SURFACE CORPORATION, 342 Madison Avenue, New York City



Stucco over Concrete, Bond Surfaced by Bonding Con-Tex. Girls Dormitory, Canton, New York.
Bertram Goodhue Associates, Architects, New York City.

Producing Bonding Surfaces on Concrete with Con-Tex

EVERYONE knows that cement will not bond—i.e. it will not physically and chemically unite with sand surfaces or stone surfaces that are coated or covered with some foreign material. Clean stone and clean sand are therefore basic requirements in the making of concrete.

In equal measure, and with equal force of fact, clean stone and clean sand surfaces are as essential to bond with applied materials as they are in the making of concrete. New cement will not bond in a true union with set and hardened cement, because set and hardened cement is a different product, derived from the chemical reaction between cement and water and therefore is a "foreign material" to new cement.

So far as permanent bond is concerned, the surface of set and hardened cement, such as makes up the form skin of concrete and coats over the aggregates beneath it, cannot bond with new material or with an applied material, such as mortar, or stucco, any more than there could be bond between coated stones or coated sand and cement in the making of concrete.

The Law of Successful Bonding

It is universally recognized that cement, in its natural behavior, makes the laws for men; and that man must conform to them if he would succeed in the use of cement.

The law of bonding to concrete is this:

"New concrete, or mortar, or plaster, or other applied materials cannot and will not permanently bond to the skin surface of set and hardened concrete, but all cementitious materials will unfailingly bond to clean sand and clean stone."

Once this law is known and recognized, success in bonding is easy. And it is easy, because ingenuity at once points out that right beneath the form skin of concrete are sand and stone in quantity; and if the bond-preventive cement covering (the skin) is removed from them outwardly, a perfect bonding surface will result, for nothing in the making of concrete has altered the atomic or ionic attraction that is exerted by these stone surfaces and sand surfaces towards cement.

Attempts to Secure a Clean-Stone Bonding Surface on Concrete

These things have been recognized for a long time; and attempts of various kinds to get at this sand and stone that lie beneath the surface skin have been made by a multitude of individuals and at great cost.

One reflection of these attempts is acid washing, to dissolve the cement and expose the stone. This, however, is unpleasant to do and costly and slow.



Producing a Plaster Bond Surface with Con-Tex. Matawan State Hospital, Matawan, New York.

Another attempt is hacking the concrete. "All surfaces shall be thoroughly hacked for bond," has been a repeated specification for years past. But hacking at best only uncovers a fraction of the desirable bonding area, and experience has proven that hacking, as it is too often commercially interpreted, is a mere disfigurement of the skin surface in spots and of no bonding value whatsoever.

Bush-hammering and power toolings of various kinds have been further attempts to comply with Nature's Great Law, but unfortunately, these methods are quite expensive and further, they crush the stone surfaces, leaving fine, powdered rock as a bond surface instead of the rugged, uninjured stone itself.

The Real Solution of the Bonding Problem But a little further ingenuity gives a further possibility. If the cement skin—the foreign coating on these multitudes of sand and stone particles—is prevented from setting when the concrete is first made, then this unset material may be brushed away from these surfaces when forms are removed and a full area of clean stone surfaces and clean sand surfaces will be available for bond, although below the surface layer thus prevented from setting, the cement will have set and hardened normally, so that these particles, though exposed as to outward surface, will be as firmly bound in as they would be in any concrete.

The Con-Tex Method and Process of Producing Bonding Surfaces This, in brief, is the method of producing bonding surfaces on concrete that was invented, developed and perfected by Nathan C. Johnson, of Hool and Johnson, and

it is known throughout the world as "The Con-Tex Method," inasmuch as the material used to produce these results is made and marketed under the name of Con-Tex.

What Con-Tex is Bonding Con-Tex is a liquid material, not acid and not harmful. Although paint-like in appearance and although used as a brush coat on the forms or as a brush or spray coat directly on fresh concrete, it is not a so-called "Bonding Paint" or "Bonding Coat."

This thin coat of Bonding Con-Tex produces a bond surface by stopping the setting action of a surface film of cement and to a desired and ideal depth, thereby making easy the getting-at, or exposing of clean stone surfaces and affording a true bond on concrete.

Con-Tex acts on cement only in the early stages—i.e.—before final set; and will not affect set and hardened cement or concrete.

How Bonding Con-Tex Acts It is to be understood, then, that Bonding Con-Tex acts by contacting with concrete while it is in the plastic stage—that is, before the concrete has taken its hard set. By this contact between concrete and Con-Tex, minute amounts of certain "active" elements are slowly fed from the Con-Tex into the surface film of cement that touches the Con-Tex and while it is yet plastic. These elements, controlled by a perfected process of dialysis, stop the setting of a thin surface layer of the concrete to a definite depth only and no further.



Exterior Bond Surface of Clean-Stone Produced for Stucco Bond by Con-Tex.
Mare Island Hospital, U. S. Navy Yard, San Diego, California.

Forms are removed as usual when the mass of concrete has hardened and then it is found that a surface layer of cement of proper depth has remained unset. This is brushed off by wire brushes, thus exposing or "revealing" the aggregates ordinarily hidden beneath the form skin.

And it is this revealed aggregate surface that constitutes the bonding surface and that unites with new cement, or plaster, or other materials of similar character in a secure and permanent bond of full strength.

This leaves the body of the concrete unaffected and hard, firmly holding the aggregate. But at the surface, clean stone and clean sand surfaces remain exposed, free of any cement covering and ready for true bond with any applied materials.

Bonding Con-Tex for Form Work and for Top Surface Work There are two kinds of Bonding Con-Tex—Bonding Con-Tex for Form Work and Bonding Con-Tex for Top Surface Work.

Form Bonding Con-Tex and Top Surface Bonding Con-Tex Work contain the same active elements, but the vehicle or body material in which these actives are carried is different. Form Bonding Con-Tex is a *hard-film Con-Tex*, or in other words, uses a vehicle or body which dries hard and is quite impervious to weather. Top Surface Bonding Con-Tex is a *soft-film Con-Tex*, so that the Con-Tex film and the unset material may easily be brushed off after about twenty-four hours from the time of application. Top Surface Con-Tex is not impervious to weather.

The Use of Form Con-Tex Bonding Grade

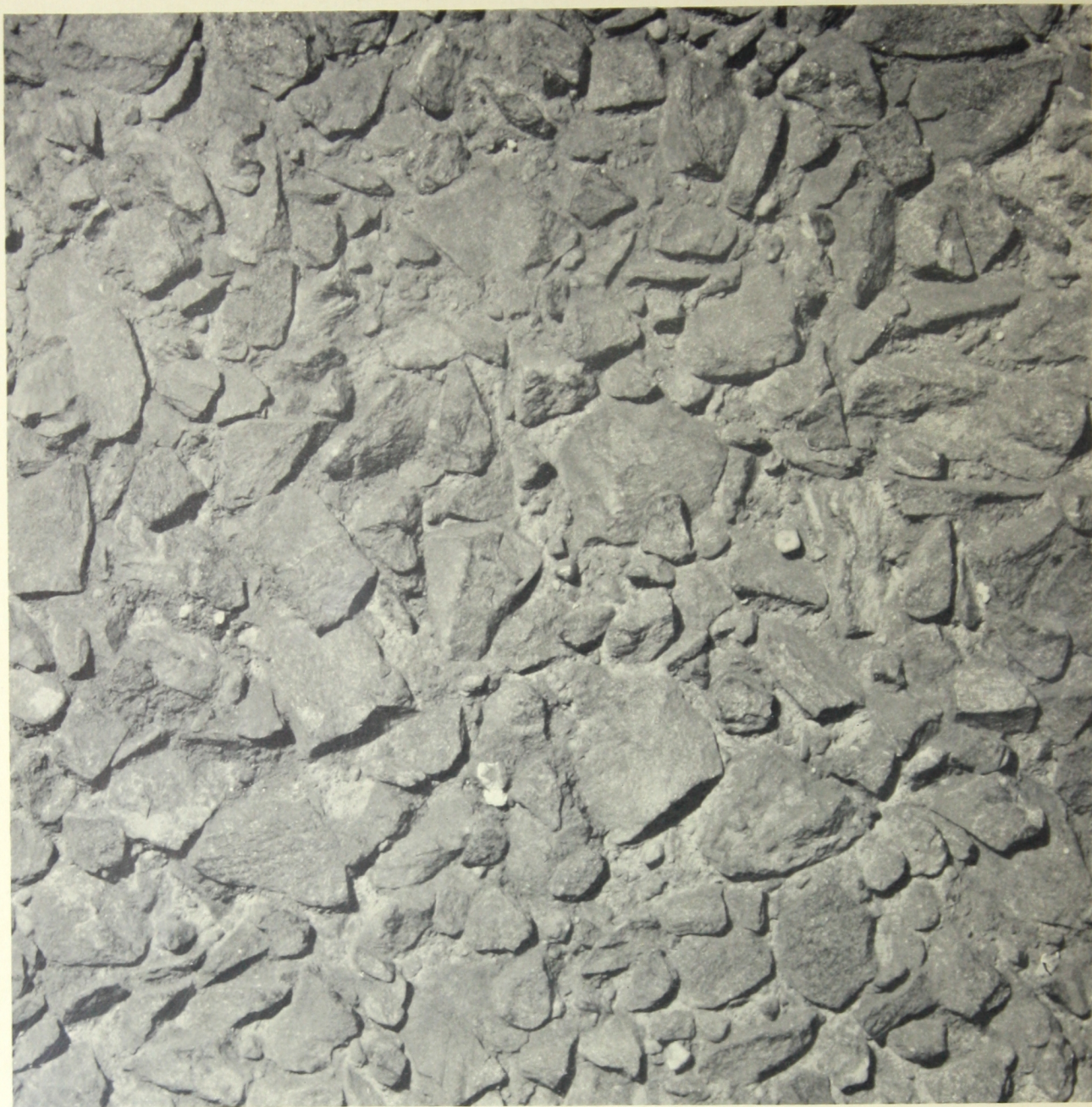
Form Work Bonding Con-Tex is applied directly to the forms well in advance of the work. One full brush coat on the forms is sufficient. It dries quickly; and when fully dry, will withstand weather. It can be walked over for the placing of steel, and other structural work can be done without damage. Yet the Con-Tex will be responsive to concrete when the forms are filled.

Application of Con-Tex to the forms can be made at any convenient time, either before or after erection.

The Use of Top Surface Bonding Con-Tex

Top Surface Bonding Con-Tex is applied directly to the concrete with a hand or power spray, or with a soft brush or by other adequate means. It is best applied within two or three hours after placement, else the result may be imperfect. About twenty-four hours afterwards (the exact time being dependent on the weather and other factors), the Con-Tex coat and the unset material are brushed away by wire brooms, leaving the clean aggregate exposed at the surface, yet firmly bedded in hard concrete below the depth of the Con-Tex effect.

In ordering Bonding Con-Tex, "Form Bonding" Con-Tex or "Top Surface Bonding" Con-Tex should be specified so that the proper variety of Bonding Con-Tex may be shipped.



A Crushed Stone Con-Tex Bonding Surface, Natural Size.

Cost of Con-Texed Bonding Surfaces The cost of a Con-Texed bonding surface, either for form or for top surface work, including labor and material—i. e., the Con-Tex itself, the application of Con-Tex, and removal of the unset surface—will vary from about 2c. to 3½c. for Top Surface Work and from 3½c. to 5c. per square foot for Form Work, according to the quantity of surface involved and the efficiency of the labor gang.

Any other method of providing a surface even approaching the Con-Texed surface in value obtained and in bonding

efficiency, will cost four to five times these figures, if, indeed it is possible to secure equal results by any alternate method.

Covering Capacity of Bonding Con-Tex The covering capacity of Form Bonding Con-Tex for use on forms will approximate 160 sq. ft. in chilly weather to 180 sq. ft. in warm weather per gallon—one application only being required for each use of the form. Top Surface Bonding Con-Tex, applied directly to the concrete surface, will cover approximately 180 to 200 sq. ft. per gallon. One coat only is required.



Finished Plaster over Con-Tex Bond Surfaces of Ceilings, Columns and Walls.
New York State Arsenal, Brooklyn, New York.

The Uses of Con-Tex Bonding Surfaces on Concrete

PLASTER BOND ON CEILINGS AND WALLS

Overhead Plastering Must be Safe Plastered ceilings—many thousands of pounds suspended overhead—must be made assuredly secure.

The industry has long recognized that this plaster-bond risk should be eliminated; and it can be eliminated through the use of Bonding Con-Tex to produce on concrete a rough, full-area bond surface of clean stone wherever it is desired to plaster.

A Con-Tex bond surface is better than the most painstakingly hand-or-power picked and hacked surface; and by Con-Tex it is secured with certainty and at a cost not to exceed the least cost of inferior attempts to accomplish a like result.

A Full Bond Surface Without Argument Results When Con-Tex is Specified and Used Roughening the form-skin surface for bond by mechanical means would seem at first thought, to offer a way out of this bonding difficulty. But in practical work, roughening of concrete surfaces fails to achieve the desired end, both because of the high cost of mechanical rough-

ening if it is adequately done, and also because of inability to get adequate results through specification alone. "All concrete surfaces shall be roughened properly for bond" is a common clause intended to cover the needs of a proper bonding surface. An architect incorporates his intentions and desires in specifications, but on the job the word "properly" is not enforceable without a costly and unpleasant argument if the contractor chooses to differ with the architect.

With Bonding Con-Tex, a specification is speedily turned into a result *and without argument*. When a specification carries the phrase "All concrete surfaces shall have a clean-stone bond surface produced by Bonding Con-Tex," the result is sure and throughout the entire area.

(For Plaster Bond surfaces on ceilings and walls, specify Form Bonding Con-Tex.)

BONDING STUCCO FINISHES TO CONCRETE

Bond Essential to Permanent Stucco Portland cement stucco, with its unlimited possibilities for texture and color effects, offers permanent and most attractive architectural treatments for the surfaces of concrete, *provided* the stucco is permanently bonded to and with the concrete. If the stucco is not so bonded to the



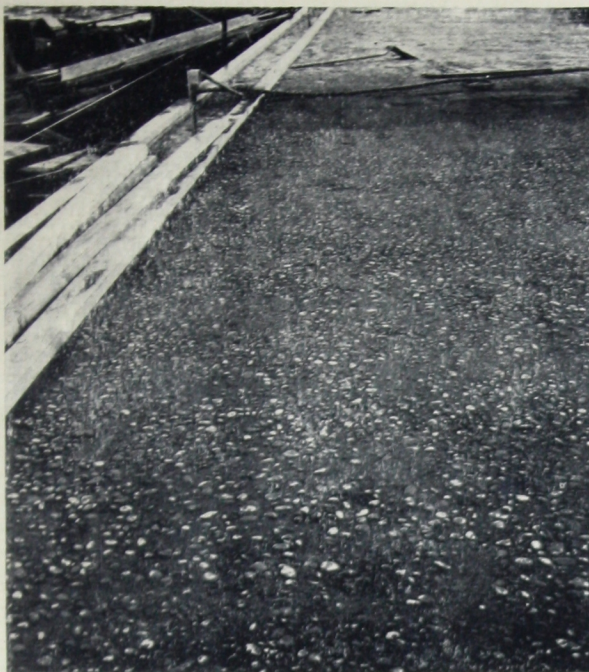
Stucco applied over a Con-Tex Bonding Surface. The Stucco is revealed for color and texture by Stucco Con-Tex.

concrete, all the initially attractive and valuable results that are attained through most careful and skillful workmanship may be lost through cracking, scaling and a partial or total fall-off of the stucco after a relatively short time. (See opposite page.)

Loosening and falling-off of stucco in this manner is all too common an occurrence. Such defects are evidences of the well-known fact that any and all plastic materials fail to bond with the form-skin surface of concrete. Needless to say, after unhappy experiences of this kind, architects and engineers rightly hesitate to attempt the use of stucco on unprepared concrete surfaces. A proper bond surface on the concrete is a recognized necessity.

Enabling applied materials to bond effectively with concrete in this manner is a tremendous advance in the concrete art. This advance is appreciated by all who work with concrete; and the clean-stone bond surface produced by Bonding Con-Tex has proven sure, always satisfactory, and is bearing fruit in a vast extension of the uses and usefulness of concrete in building construction as well as in other constructions.

(Specify Form Bonding Con-Tex on all vertical walls, ceilings, beam sides and soffits; and Top Surface Bonding Con-Tex on all horizontal areas, such as slab tops, coping tops, etc.)



A Concrete Floor Slab prepared for Bonding with Top Surface Bonding Con-*Tex*. Topping is applied when building is completed and as a finishing operation.

BONDING FLOOR TOPPINGS TO FLOOR SLABS

Gravity vs. True Bond Concrete floor toppings possess intrinsic values that should make them ideal. All too often they are far from ideal in behavior and give trouble over large areas.

"Defective workmanship" is usually blamed. Granting that no workmanship is perfect, it is none the less to be noted that *where the topping is bonded to the under-floor*, a perfect floor will be produced by the same workmen who produce a troublesome floor where there is no bond.

The percentage of floors that are not bonded, but are actually separated in a short while from the underslab may be judged by tapping the floors with a sounding rod of some sort, such as an umbrella or cane. A hollow sound denotes a loose floor; and a loose floor will surely give trouble because the forces internal of the topping that lifted it bodily away from the under-floor will eventually result in destruction, if allowed to pursue their own course unresisted because of lack of bond.

Such separation is important. Separation of topping and base is one evidence of a condition that has an important bearing on worth, usability and permanence. Separation is but the first evidence of a serious internal stress condition in the topping; and dusting, scaling and breakage with oftentimes complete destruction are results that surely, though more slowly, come along at a later time.

Bond is Essential The reason for this separation is two-fold.

First: There can be no bond between the wearing course and the under-floor *unless the under-floor is prepared at the time of placement for the reception of the topping.*

Second: This pulling-away takes place because there is no bond resistance to meet the stress that exists in the very top film of every troweled floor; and an unresisted stress of this character lifts and curls the slab and eventually breaks it up.

Dishing Through Lack of Bond Disastrous A second evil attendant upon the splitting apart, or failure to bond the topping and under-floors, is the well-known phenomenon of "dished" or hollow-center floors. This is caused by an unequal and very great skin tension induced by evaporation and other causes on the top surface of the topping slab. This causes a tension which tends to curl the slab, and brings about dishing, unless there is a restraining bond to the under-floor.

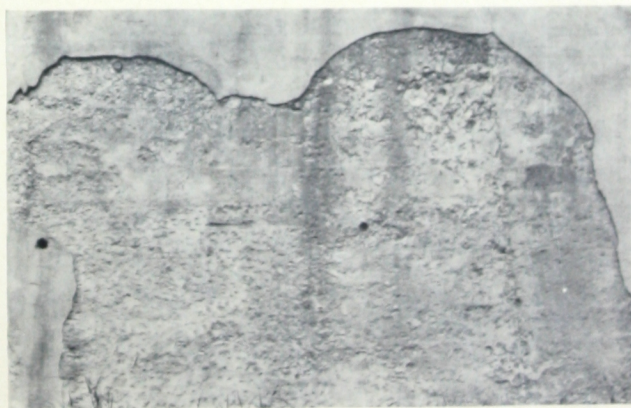
These difficulties are common but easily avoided. The most important act is to provide a true bonding surface on the top of the concrete under-slab. Once this is done, any finish may be applied to it with full assurance of its remaining permanently in place, and with a further knowledge that the slab itself is thereby structurally thickened by the amount of the topping, so that the structural safety is increased without an increase in cost.

So-called integral finish floors are fine in theory, but in practice are too often found to scale and peel; to suffer from irregularities of surface impossible of avoidance; and to be badly scarred by shores and other construction equipment.

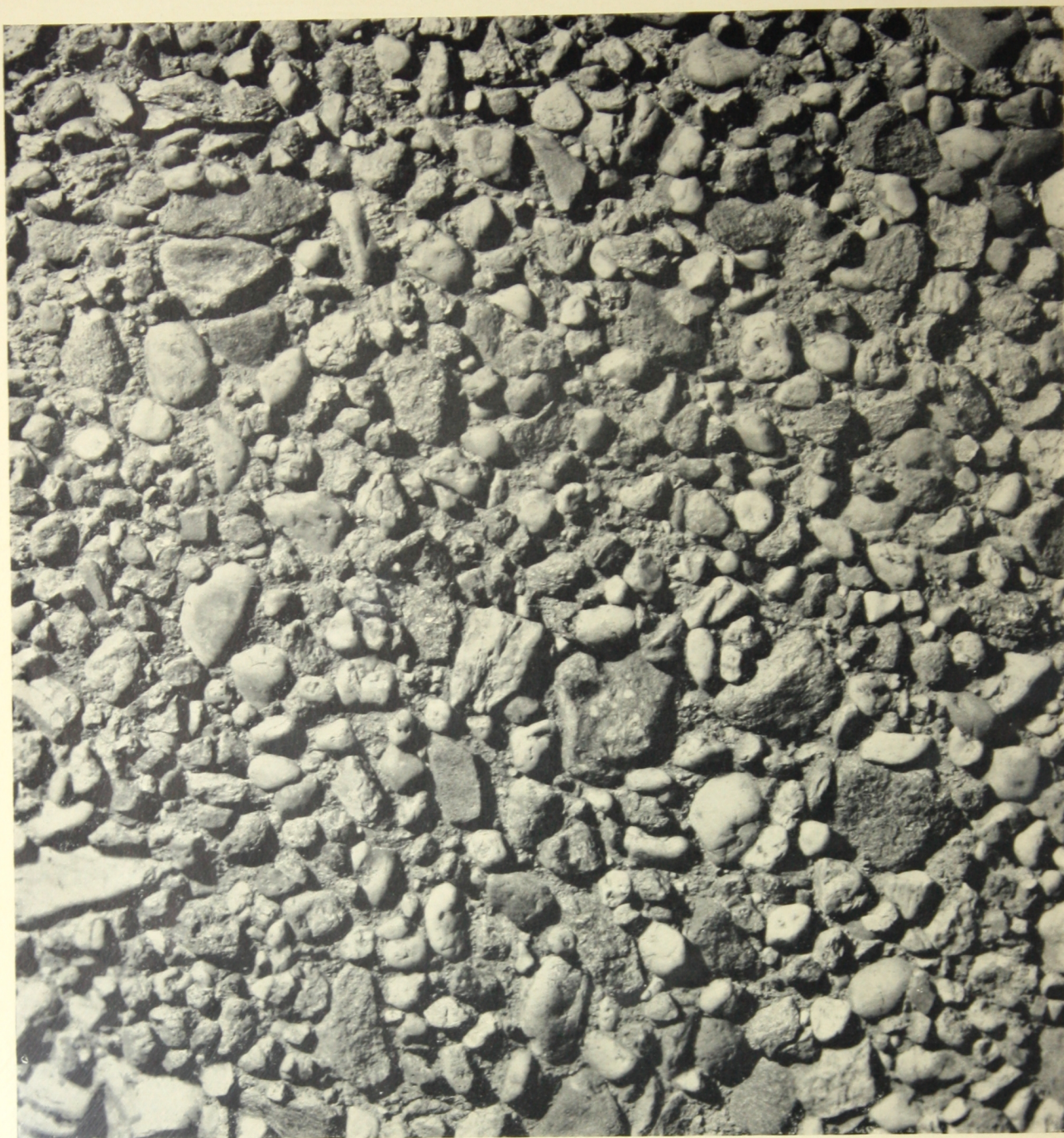
A poor floor loses a tenant; and an empty building offers poor returns.

A Con-*Tex* Bond Surface on the under-slab enables the finish coat to be put on as a last operation, free from blemishes.

(Specifying Top Surface Bonding Con-*Tex* treatment of under-slabs will enable perfect floors to be put in with assurance of integrity).



The Bond that Fails—a "Thoroughly Hacked" Concrete Surface.



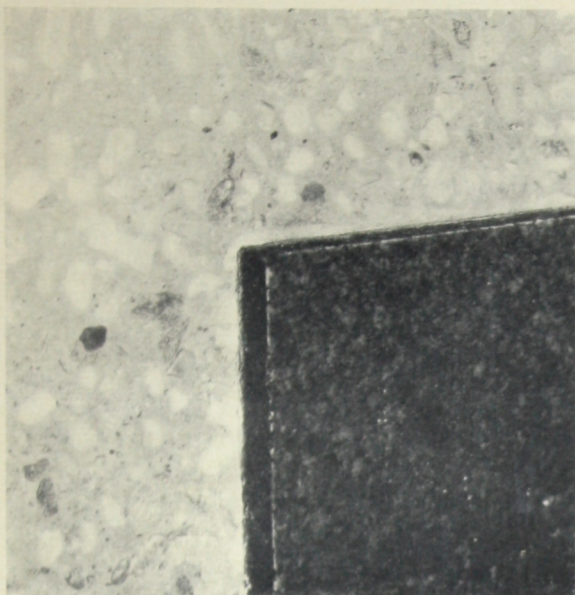
A Gravel Con-Tex Bonding Surface, Natural Size.

The above cut shows in detail and full size, a characteristic, clean-stone, bonding surface obtained with an ordinary silica gravel.

This has been broomed off in the usual way as in the preparation of top slabs, to receive finish coats of floors or in preparing vertical surfaces or ceiling surfaces to receive plaster or stucco, or waterproofing or materials of like character.

It will at once be seen that there is not only a mechanical locking-on, but that this surface will take and receive any applied coating with less effort than any other type of bond surface.

The utility of this bond surface created by exposing stone with Con-Tex is impossible to exaggerate. It not only simplifies building operations, but it lessens their cost and immeasurably extends the abilities of concrete.



Detail of 1-inch thick Cork applied to Con-Tex Bonding Surface over Concrete.

APPLYING CORK BOARD TO CONCRETE WALLS

IN THE construction of cold rooms, refrigeration chambers and so on, it is preferable to set the cork lining in place after forms have been removed. In such work, the bond to the structural concrete must be strong enough to support not only the weight of the cork but also the plaster applied over the cork.

Where cork is used to line the forms, the juices of the concrete disintegrate the cork and further impregnate it with lime salts to a degree that materially cuts down the intended insulation value.

The surface produced by Con-Texting the concrete makes sure the bonding of the cork board, as well as the applied plaster, with a large factor of strength to spare over requirements.

Cork may also be applied to a Con-Texted Bond Surface by bitumen. If the bitumen is spread hot on the cork and the cork then pushed up into place, a sure bond will result and in addition, behind the cork will be dead air cells, formed by the revealed stone, which will give added insulation value in material amount.

(Specify Bonding Con-Tex for all wall, ceiling and floor areas that are to be lined with cork.)

BOND FOR MASTIC WATER-PROOFING

ASPHALTIC or mastic waterproofings, when applied to concrete surfaces in sufficient thickness to do any good as water resistants, have a tendency to slough off at one or at many points.

Any such breaking of the film destroys its protective value. But if the surface of the concrete is prepared with Bonding Con-Tex, the grip of the protective coating is so strong, both to the clean stone surfaces and between the stones as well, that this tendency to loosen or slide off is eliminated. Even if there be abrasion, as from circulating



Cork Lining on Con-Texted Surfaces, Filene Service Station, Cambridge, Mass.

fluids, or from waves or other causes, the film remains unbroken and the watertightness unimpaired, as the stone itself is not absorbent nor acted upon by the fluids.

Bonding Con-Tex surfaces are the surest guarantee for the preservation and continued usefulness of asphalt-coated or mastic-coated concrete that are subject to water or other destructive action.

A Con-Tex bond surface not only reduces to about 16% the possible absorptive area of a concrete exposed to water action, by substituting from 80 to 85% of non-absorbent stone for the usual absorbent full-cement skin and its faculty of "feeding back" this moisture into the mass, but it further goes a long way toward solving the vexatious "sea water problem" in concrete of all kinds, by providing a mechanical clinch for the applied protective coat.



Detail of Asphaltic Waterproofing applied on Con-Tex Bonding Surface.



Aeolian Building, Fifth Avenue, New York City. A Bonding Con-Tex Surface on Basement walls locks on the Waterproofing Coat.

BOND FOR MASONRY-PLASTER WATERPROOFING

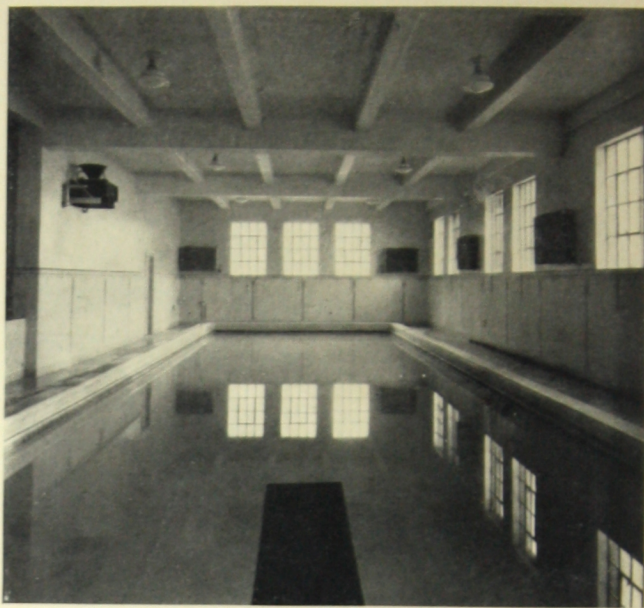
THE value of this method of waterproofing is dependent upon the applied masonry-plaster becoming and remaining an integral part of any concrete to which such plasters are applied. If water can get through the concrete wall and between this plastered surface and the concrete, it will cause failure by forcing off the plaster in large or small sheets, and the value of the whole job is then imperilled.

By preparing the surface of the concrete with Bonding Con-Tex, a bonding surface is obtained to which the waterproof plaster will unfailingly and uniformly adhere.

A method of waterproofing that is coming into increasing vogue is surfacing the concrete with Bonding Con-Tex below grades both *inside and outside*. To the outside is applied an asphaltic waterproofing which finds lodgment and security in the exposed surface, thoroughly waterproofing it against outside water.

The inside exposed surface is left without further treatment until the building has taken its settlement.

With the exposed, clean-stone bond on the inside, a masonry-plaster waterproofing may be applied *after any settlement cracks have developed* and as a final finishing of the building.



A Bonding Con-Tex Surface secures the Tiling of this Pool to the Concrete. Columbia Grammar School, N. Y. City.

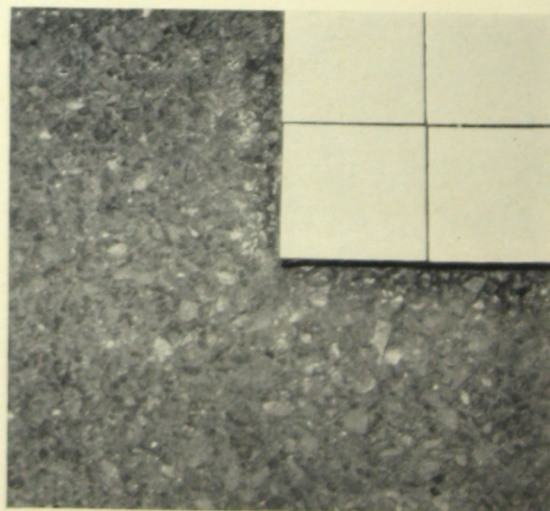
BONDING TILE TO CONCRETE

WHEREVER tile is applied to the smooth skin surface of concrete, sooner or later there is trouble through failure to bond with the concrete.

The remedy is to use a bonding Con-Tex surface to which the backing mortar will stick everlastingly and throughout the entire structure.

Swimming pools, building interiors, subway stations, and a host of other tile-veneered structures evidence these truths. The service conditions to which such structures are subjected demand the most thorough bond between the tile facing and the concrete structure.

(Specify *Form Bonding Con-Tex* for vertical walls as in *Swimming Pools* and for ceilings; and *Top Surface Bonding Con-Tex* for floor or other horizontal areas.)



Detail of Tile over a Bonding Con-Tex Surface.



Brick Veneer bonded to a Con-Tex Bonding Surface without metal ties.

BONDING BRICK OR STONE VENEERS TO CONCRETE WITHOUT METAL TIES

THE old idea that a few pieces of wire or of thin metal, imperfectly protected from corrosion by dipping in a little paint or by galvanizing, will adequately and permanently hold masonry veneer to a concrete structure, does not appeal to the thoughtful mind.

On the other hand, cement mortar is known to bond firmly and permanently to the surfaces of brick or of stone. All that is needed, then, to tie brick or stone to concrete is a proper bonding surface on the concrete.

With brick or stone as one unit and a concrete surface prepared by Bonding Con-Tex as the other, the backing mortar ties the two together into a monolithic construction with an adhesion value of over a ton to every five bricks—i.e., per square foot.

No metal ties can begin to equal that value or to approach it in efficiency or low cost. And with Bonding Con-Tex surfaces, there is no longer any question as to placing ties in the right spot, for the whole surface area is a tying surface.

(Specify Form Bonding Con-Tex on all vertical or overhead areas, and Top Surface Bonding Con-Tex on all slab tops, or like horizontal areas.)

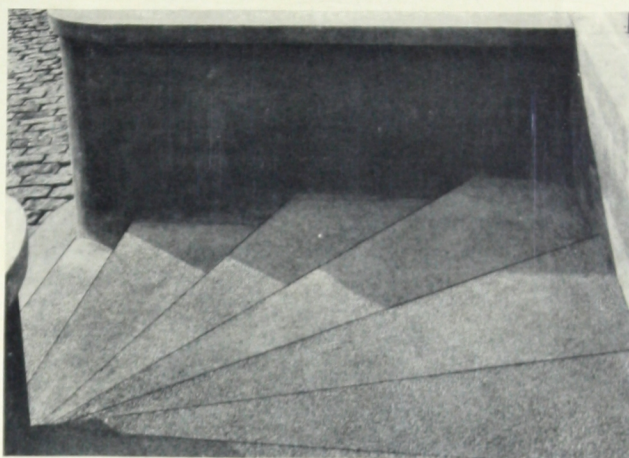
BONDING FINISH COATS TO BASE COATS IN CONCRETE STEPS

FROM great stadiums to the humblest of homes, finish-toppings on treads and risers are cracking off and peeling away from the structural concrete beneath.

Top Surface Bonding Con-Tex, spread over treads and Form Work Bonding Con-Tex, painted on riser forms when placing the structural concrete, gives an unfailing clean stone bond that prevents such structural deteriorations.

To this clean stone bond surface on the base material, finishes of any type and of any nicety may be applied. If these finished coats contain small sized crushed stone and are themselves revealed by Top Surface Con-Tex, a non-slip stair tread, economical in cost and most attractive in appearance, will be obtained.

(Specify Form Bonding Con-Tex on risers and Top Surface Bonding Con-Tex for bonding surfaces on treads and Top Surface Con-Tex, Light or Medium Grade, for finished Top Surfaces on applied finishes.)



Non-Slip Stair Treads of Con-Texed Concrete.

BONDING POURING PLANES TO POURING PLANES

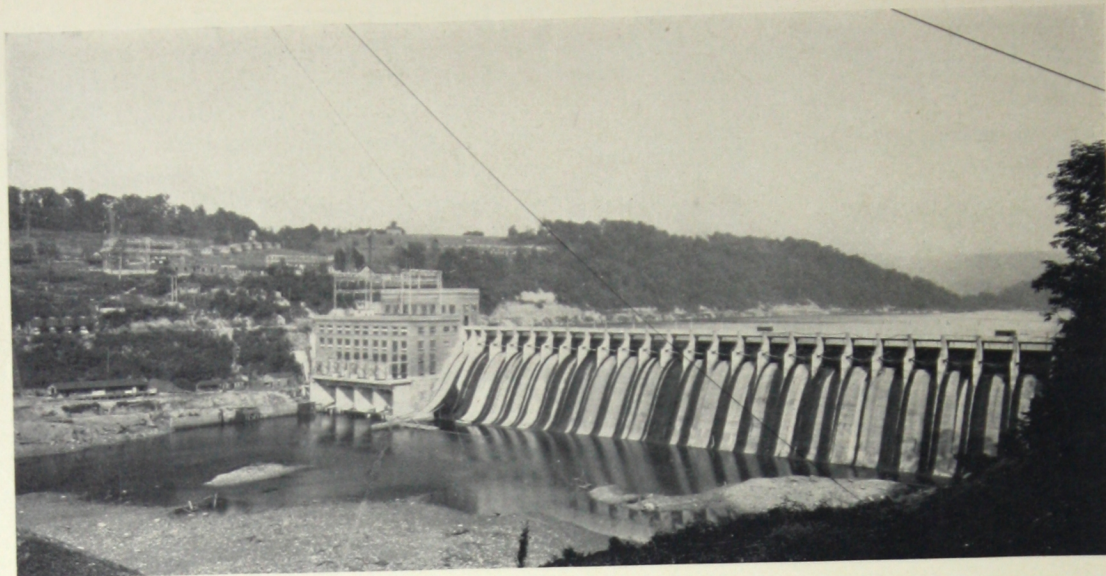
THE LIFE of any concrete exposed to moisture, depends upon its ability to resist the entrance of percolating water with its consequent solvent and softening action.

Disintegration of concrete at and near pouring planes in such structures as dams, reservoirs, tanks, swimming pools, bridges, and in fact, in every kind and class of structure, gives indisputable evidences that the starting point of trouble in most concrete is at and near the pouring planes.

Although the body concrete may be sound and impervious to the infiltration of water, the streaks of muck or "laitance" that occur at the pour lines—material that no stretch of the imagination could call concrete—not only allow water to come through, but invite its entrance. This material dissolves away through water and frost; and the once monolithic mass then becomes a series of loosely laid and unreliable units.

Top Surface Bonding Con-Tex, spread over the top of a lift surface of any concrete, and then removed with the loosened slack material by a hose stream or by wire brooming before the next lift is poured, gives a non-leaking permanently tight joint, that is a joint in name only, for it is integral at all points.

(Specify Top Surface Bonding Con-Tex on all pouring planes or construction joints.)



Cheat Haven Dam, Cheat Haven, Pennsylvania. Sanderson & Porter, Engineers and Constructors.
Bonded at Construction Joints and at Bulkheads by Con-Tex Surfaces.

BONDING TOGETHER CONCRETE SECTIONS AT BULKHEAD JOINTS

It is not commercially practicable to pour what are designed to be monolithic structures in one pour. Work joints must be made; and there is no actual bond between one pour and the next unless a true, clean-stone bond surface is obtained.

Where it is necessary to make vertical joints in concrete, as at bulkheads, or in such structures as tanks, reservoirs, bridges, dikes, levees, docks, piers, floors, etc., Bonding Con-Tex makes possible the preparation of a surface against which new concrete can be poured with full assurance that a true, water-tight bond will be established.

The procedures employed are identical with those before outlined, except that Form Work (hard film) Bonding Con-Tex is applied to the bulkhead form before concrete is poured.

Con-Tex Surfaced bulkhead joints never leak, but no metallic or bitumen joint for concrete has as yet been devised that will not become leaky in time.

(Specify Form Bonding Con-Tex on all bulkheads.)

EXPANSION JOINTS THAT ARE WATERTIGHT

MASTIC fillers of various kinds in expansion joints will not bond to a smooth concrete surface as it comes from forms. This means that such joints are expansion but not contraction joints, for the mastic does not follow when the joint opens; and this failure to follow means that the joint not only does not remain tight, but also that when the joint is open, foreign materials such as dirt or stones get into the joint and spall the concrete by pressure when the joint closes.

But to a concrete surface of clean stone and clean sand, the mastic will bond. Thus bonding to both faces of the

joint, the mastic is held in place; and it will give and take as is required, thus maintaining a tight joint at all times.

Bonding Con-Tex on the forms before casting the concrete at expansion joints gives this desirable result at a negligible cost. *(Specify Form Bonding Con-Tex.)*

BONDING CURB-FINISHES TO CURBINGS

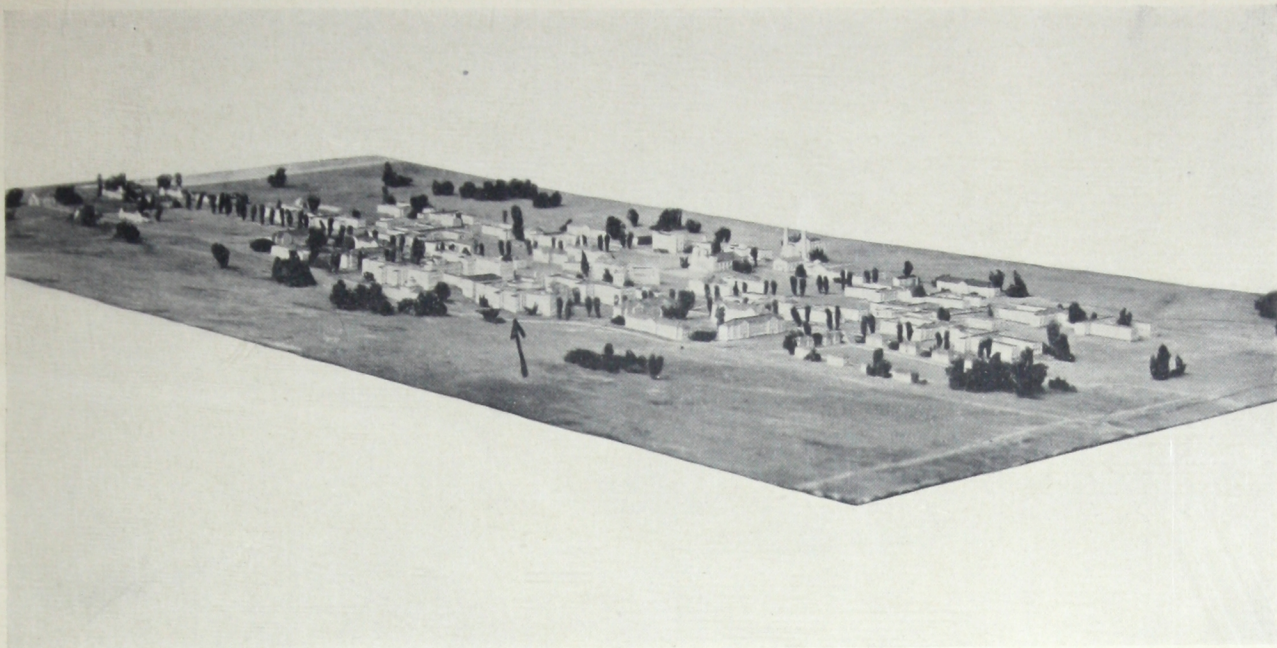
CONCRETE curbings are rapidly becoming standard. But questions as to the advisability of their use are constantly brought up, because of the separation of the finish coat from the cast curb.

Form Bonding Con-Tex put on the side forms and Top Surface Bonding Con-Tex brushed on the screeded top surface of the structural cast concrete remedies this difficulty, surely and satisfactorily and insures integrity and endurance, by giving a monolithic bond in the truest sense between body and finish.

Curbing may also be cast monolithically and surfaced with Standard Con-Tex.



Con-Texed Curbing—House of Representatives Office Building, Washington, D. C. Fred Drem Co., Constructors.



Model of Rockland County Hospital, Orangeburg, New York.
Department of Public Works, New York State.

The Rockland County Hospital of the State of New York located at Orangeburg, New York, is shown in full model in the upper photograph. In the lower photograph is shown one building only of this huge group in the first stages of construction. This same building is indicated on the model by the arrow, in order that the size of this project may be better comprehended. The Nienhouse Company, of New York City are the Constructors under the Department of Public Works of New York State.

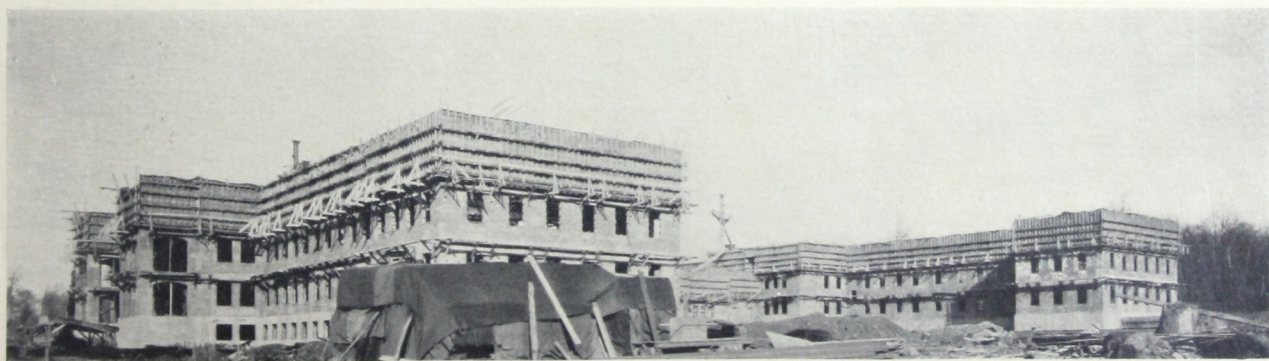
Not only is this group most excellently planned as of the modern science of hospitalization, but further, every care

is taken as of low first cost and low upkeep.

The buildings are of concrete, bond surfaced throughout the exterior by Bonding Con-Text to secure a clean-stone, enduring bond for the finish stucco. The stucco itself is to be revealed for texture and color.

Floor slabs have revealed stone surfaces on their upper faces, ready to bond with the toppings put on as a finishing operation.

About 18% in total cost over competing materials was saved by the form of construction adopted.

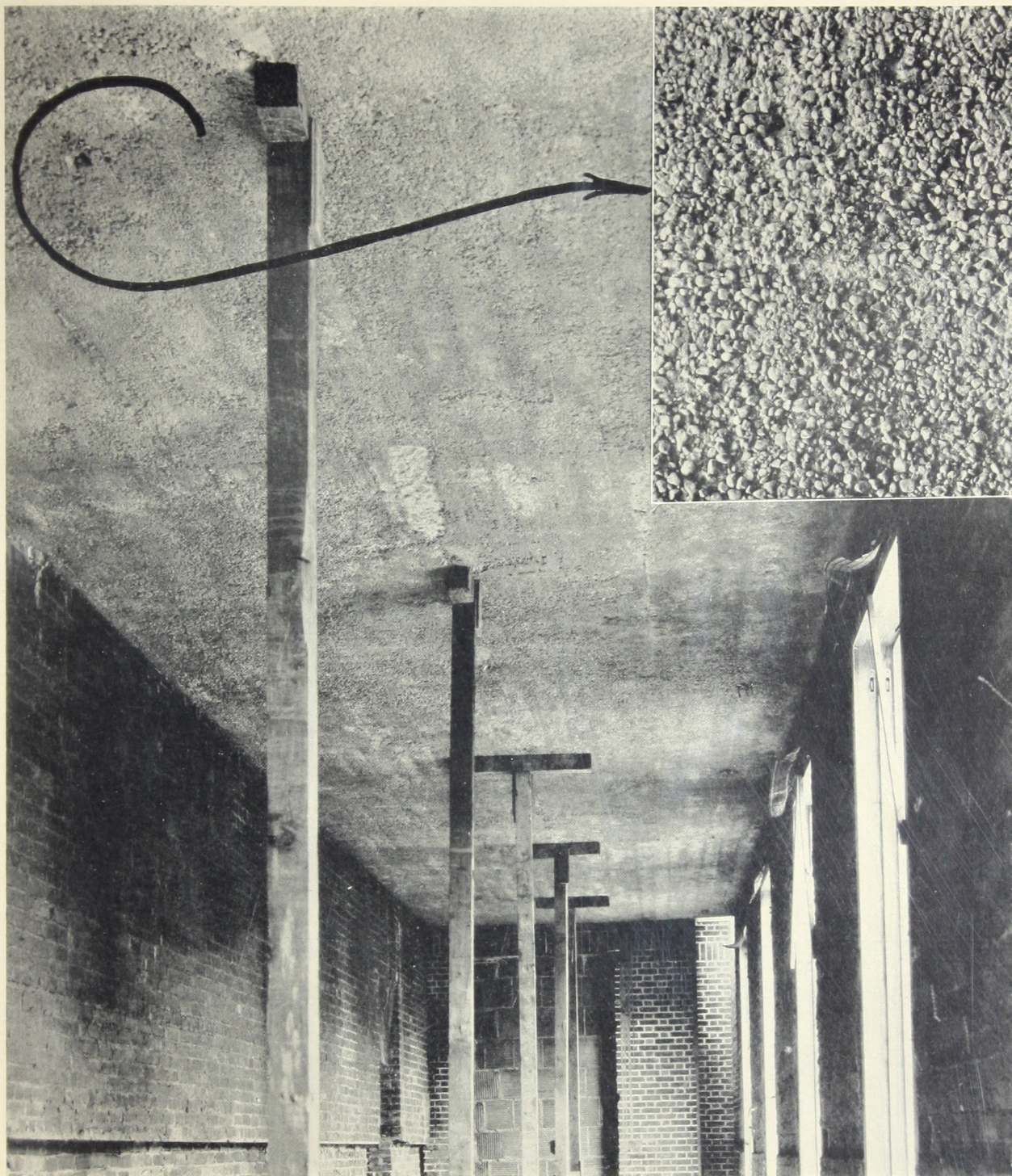


The first building as of December, 1927—Rockland County Hospital, Orangeburg, New York.



Stucco over Bond Surfaced Concrete was adopted by John Russel Pope for the 18 buildings of the Knights of Columbus Sanatorium at Gabriels, New York. Bonding Con-*Tex* was used to produce this Surface.





Plastering on this Con-Tex Plaster Bond Surface at the Garden City High School, Garden City, Long Island, will never come loose or fall because of the full-roughened area of Clean-Stone Bond Surfaces produced by Bonding Con-Tex.
 Starrett and Van Vleck, Architects, New York City.



How to Specify CON-TEX

It is always best to specify Con-Text by name.

The following form is commonly used:

Form Surface "All surfaces of Form-Cast Concrete indicated
Bonding Work on the plans or in the specifications or otherwise designated to be surface finished for bond with plaster, stucco or other applied materials, shall obtain this bond surface by the use of *Form Con-Text, Bonding Grade*, as made and supplied by the Concrete Surface Corporation, 342 Madison Avenue, New York City.

"This *Form Bonding Con-Text* shall be applied to all areas of forms where such bonding surfaces are required, in an even coat before casting the concrete and care shall be taken to completely cover all areas. The Con-Text coat shall be allowed to dry thoroughly before being exposed to rain, weather or the elements.

"After the concrete has set, the loosened surface of the concrete shall be removed by wire brushes immediately after removal of the forms, taking care to thus remove all loosened sand or cementitious material and to secure a full roughened area of cleanly exposed coarse aggregates, ready for bond with applied materials.

"All forms on re-use for further exposed-aggregate bond surface shall be cleaned of old concrete or mortar and then recoated throughout such areas with *Form Bonding Con-Text* before concrete is again poured against them."

Top Surface "All top surfaces of concrete indicated on the
Bonding Work plans or in the specifications or otherwise designated to be surface-finished for bond with mortar toppings or other applied materials shall obtain this bond surface by the use of *Top Surface Con-Text, Bonding Grade*, as made and supplied by the Concrete Surface Corporation, 342 Madison Avenue, New York City.

"All surfaces that are indicated on the plans or in the specifications, or otherwise designated to be surface finished for bond by exposing aggregates shall be given an even coat or coats of *Top Surface Con-Text* by spraying, or brushing on, or by other approved means, and prior to hard set of the concrete, taking care to completely cover all areas.

"After the body of the concrete has set, the loosened surface layer of concrete affected by Con-Text shall be immediately removed by wire brooms or by other effective and approved means; and the surface so exposed shall then be thoroughly washed with water and broomed until full roughened areas of cleanly exposed aggregates are obtained ready for bond with applied materials."



How to Specify CON-TEX IN PUBLIC WORK

Where Trade Names are Not Permissible

"ALL CAST-CONCRETE surfaces indicated on the plans or in the specifications, or otherwise designated to be surfaced or surface-finished for bond with applied materials shall be surface finished for this purpose by the use of an approved liquid material painted on the forms before placing concrete, or spread directly on the concrete where so directed, to obtain full area rough surfaces of cleanly revealed aggregate.

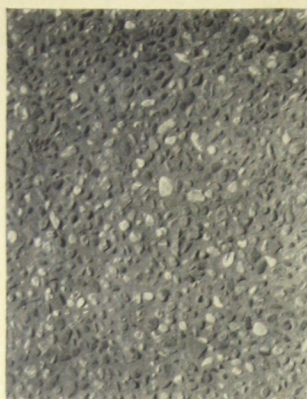
"The material used to produce this surface finish shall be an approved liquid coating applied to the forms, or in top surface work, applied to the concrete, before it has set; and this approved coating shall meet the following requirements: It shall be composed of a colloidal base carrying active material, which latter shall operate only after coming in contact with the alkaline fluids of the concrete. This coating liquid shall not contain free acid; shall not contain any ingredient that will injure the aggregate, the reinforcement or the forms, and there shall be no after-effects injurious to the concrete or to applied materials. All surfaces, or forms for surfaces that are specified to be roughened bonding surfaces obtained by exposing aggregates, shall be given an even coat or coats of this liquid, taking care to completely cover all areas.

"Where such coating is applied to forms, after removal of forms, the loosened surface of the concrete shall be immediately removed with wire brushes or wire brooms or other effective and approved means until a full area rough bonding surface of cleanly exposed aggregates is obtained; and, at the architects' or engineer's discretion, the concrete shall then be thoroughly washed down with water."



Woodland Bridge, Montreal, Canada.

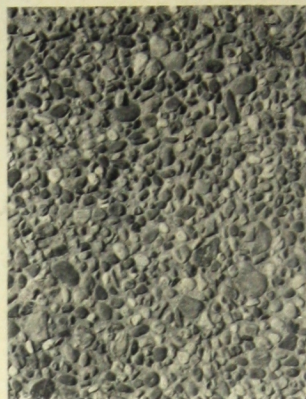
Coarse Stone Mixture Examples



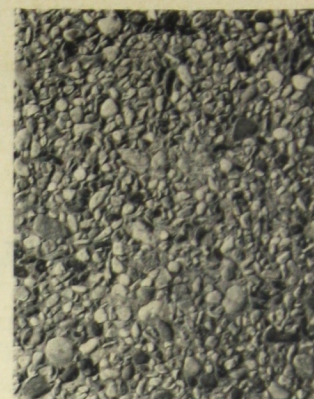
No. 1
Nearly 1 : 2 : 4
(Not enough stone)



No. 2
Mix—1 : 2 : 4½
(Better)



No. 3
Mix—1 : 2 : 5
(This mix best)



No. 4
Mix—1 : 2 : 6
(Too much stone)

Specifications for Concrete

UNIFORMITY in concrete is of the utmost importance. To secure uniformity, endurance, impermeability and high strength, we recommend that concrete, of whatever kind and for whatever purpose, be specified and proportioned on a basis of:

"One part cement, two parts sand and all the stone the mix will comfortably carry, with enough water to give a mushy consistency."

The above specification always works. It allows for any stone (whether crushed stone or gravel) for any size of stone or any changes in stone supplied, as well as for the characteristics of the sand used, which may change from hour to hour, and for job conditions as well.

We further recommend that specifications provide as follows:

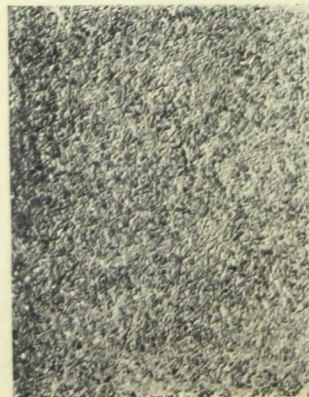
"All concrete shall be deposited evenly and continuously in forms. It shall not be spaded away from forms, but shall be well puddled; and shall be run up in a continuous pour to full height of forms by placing bulkheads at such intervals that a full day's work will consist of the quantity contained between bulkheads and to full height of forms."

"All bulkheads shall be coated with Form Bonding Con-Tex, and a clean-stone bonding surface shall be obtained at the end of each section, so that the abutting section shall thoroughly bond to and with each section previously poured."

Fine Stone Mixture Examples



No. A
1 : 2 : 4½
(Fair)



No. B
1 : 2 : 5½
(Better)



No. C
1 : 2 : 6
(Best)